

RICE LAKE NWR
NARRATIVE REPORT - 1967

RICE LAKE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

1967

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF SPORT FISHERIES & WILDLIFE

FISH AND WILDLIFE SERVICE

MC GREGOR, MINNESOTA

REFUGE PERSONNEL

Carl E. Pospichal	Refuge Manager
Leonard F. Hurd	Maintenanceman
Ieland A. Thornbloom	Biological Technician

W.A.E. EMPLOYEES

Dwight C. Bailey	Laborer, Farm
Leslie E. Drone	Laborer
John A. Nordstrand	Laborer, Farm

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RICE LAKE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY - DECEMBER, 1967

I GENERAL

A. Weather Conditions:

	<u>Precipitation</u>			<u>Max.</u>	<u>Min.</u>
	<u>Month</u>	<u>Normal</u>	<u>Snowfall</u>	<u>Temp.</u>	<u>Temp.</u>
January	1.62	.633	23.0	36	-40
February	.15	.599	5.0	37	-35
March	.71	1.239	7.0	66	-22
April	1.44	2.343	5.0	70	5
May	1.61	3.716		79	17
June	4.74	4.071		84	39
July	.82	4.440		90	44
August	2.54	3.970		85	34
September	.82	2.749		82	20
October	1.11	1.575	2.0	78	19
November	.11	1.258	1.5	55	- 5
December	.92	.725	6.0	40	-34
Annual Totals	16.59	27.318	49.5	90	-40

The moisture listings for months in which snow fell include the precipitation which fell as rain and the snowfalls which were melted for measurement here at refuge headquarters. As usual, our temperature data came from the Government Weather Station at the Sandy Lake Dam, located 23 miles north of refuge headquarters.

January started with mild weather and though temperatures were below zero at night the days were fairly mild. A low of -40 degrees was the recorded low. There were no long periods of below zero temperatures so common in January. Precipitation for the month was above normal.

February continued with mild daytime temperatures and below zero readings every night. March, usually our heavy snow month, proved to be the exception this year. Only seven inches of snow was received for a total of .71 inches of moisture.

April and May were close to normal temperature-wise but below normal in precipitation. April in this country is always full of promises but seldom capable of breaking into real spring-like weather.

The summer months of June, July and August were cool and dry. June had near normal precipitation but July and August were very dry. In fact, by the end of July all small water areas were drying up and by the end of August all small water areas were completely dry. The "old timers" of the area claimed they had never seen it so dry. It was good weather to clear in low areas not accessible in normal years and other related tasks, but very difficult for hay or crop production. Pastures were completely burned up by the middle of August and farmers began supplemental feeding.] !

The fall months of September, October and November continued with dry weather. Temperatures were mild and a nice fall was enjoyed. We had our first frost on September 22nd. However, by the opening of grouse season on September 20, the fire danger was way up. By the opening of duck season forestry officials were warning the public to be extremely careful as the fire danger was very high. Duck hunters in this area were frustrated as the dry conditions left the hunters hard-pressed to find any place to hunt.

November and December continued with little moisture, either as rain or snow received. Enough moisture was received prior to deer season to alleviate the high fire danger. By the end of the year we had only two inches of snow cover although a total of six inches was recorded.

To summarize for the year, we had fairly even weather through the year with no real extremes of hot or cold received. Very few blizzards, rain storms or windstorms were received. The year will go down as one of the driest we have had in many years. In fact, the driest since accurate records began in 1945. The most

moisture received in any one year period from 1945 to the present was 35.86 inches received in 1955. The least received was the 16.59 inches received this year. In addition, the prospects for 1968 point to another dry year as the water table is down several feet and continuing dry weather seems to be the rule. However, weather conditions in this section of the country are very unpredictable and water levels have a habit of changing overnight.

B. Habitat Conditions:

1. Water:

Weather conditions during the spring cooperated in a well-regulated runoff which caused no water management problems. A rise was noted in late March but controls were free of ice and it was possible to permit a free flow immediately. Logs were placed in the Rice Lake outlet control on March 30, to keep Rice River out of the lake but the radials on Rice River remained wide open until April 25, when the first adjustment downward was necessary. The ice went out of the lakes on April 16, just a week earlier than the previous year. A combination of cool nights and warm days helped to regulate the rate of runoff but it was still highly unusual to experience river elevations from early April to nearly mid-June which were considerably lower than those of Rice Lake. The mid-June condition lasted only a few days as a result of heavy rains following an extended dry period. Another unusual condition was that it was not necessary to run water from Rice Lake during the late spring and summer. The high of 97.00 for Rice Lake was reached in mid-April. On June 19, the Rice River Pool stood at 97.94 or .02 higher than the spring peak of April 3.

In spite of the fact that controls on both Rice Lake and the Rice River were kept closed during the summer months, water elevations continued to drop to the point where they were below desired levels. Lack of precipitation and heavy evaporation combined to drop the water table to its lowest level in many years. Water areas considered permanent, dried completely. It was reported by some as the driest summer in over 30 years; a far cry from the floods and other water problems of 1964 and 1965. By fall it was impossible to float a boat in many parts of Rice Lake and it was necessary to blast a channel at the Rice Landing so boats and canoes could be moved to water deep enough to float them. It was possible to walk across the Rice River in some places without going more than ankle deep in the water and it is almost a certainty that had

it not been for the control on the Rice River Pool, the river would have been completely dry upstream. There was no flow except from springs along its upper course in the refuge. Readings at the Rice Landing became impractical in September due to isolation of the gauge from the lake. Beavers along the river below the refuge kept some water impounded in that area.

A light flow was allowed from the lake, beginning in early November, to facilitate the rescue of northern pike by State crews and to bring the lake to desired winter level. The Rice River Pool was drawn down in early December. The lakes and river were frozen over on November 4. At the end of December the elevation of Rice Lake was 94.26 over a foot (1.14) lower than at that time in 1966. The Rice River Pool stood at 93.30 or .60 lower than a year ago, mainly due to reduced flow in the river in 1967. The control was open both years.

2. Food and Cover:

The better control of water levels afforded by the runoff and general weather conditions contributed greatly toward excellent production of aquatic wildlife foods. Wild rice, the main attraction of waterfowl to this area, had an especially good growing season. By the time the rice beds were ready for harvest by the Indians some areas were inaccessible due to low water and these were dedicated entirely to re-seeding and waterfowl use. Some rice beds were grazed during the growing season by Canada geese which caused minor eat-outs. During rice harvesting operations in September, 85,695 pounds of wild rice was taken from Rice Lake. As is the case with careful Indian methods, including staggered picking of various parts of the lake, a sufficient portion of the crop was returned to the lake for seeding and waterfowl food by actions of wind and weather. It is estimated that about 90% of the total crop finds its way back into the lake. Most common among the waterfowl using the rice beds were the ringnecks, up to 30,000 in number. Gorged birds, unable to fly, were again a common sight.

Wild celery beds in the open water areas were again excellent. Bulrushes provided excellent cover through the summer and fall and seeded heavily. Various species of pondweeds, smartweeds, duckweeds, sagittaria, Bidens and cattails contributed to more than adequate food and cover needs for waterfowl and other marsh dwellers.

Cultivated crops were limited in production due to extremely dry conditions but they did provide good nesting cover and a

fair amount of feed. Several hay units were taken out of production and held as nesting cover. The value of this will be studied further in 1968 as early cover was not yet available on these units in 1967. Cut-over timberlands provided excellent browse units for deer and the varied woodland types fulfilled the needs of ruffed grouse. The few sharp-tailed grouse found food and cover over the many types of habitat found on the refuge, including bog, grasslands, croplands, brush and timber.

Because of low water, wood duck roosts used during the past several years were dry or nearly so and were therefore not used in 1967. It was noted that these birds found the rice and bulrush beds their best choice as night roosts.

II WILDLIFE

A. Migratory Birds:

1. Whistling Swan:

The first flock of whistling swans on the refuge during the spring of 1967 came in on April 10. By the end of the third week of April the peak of 10 birds had come and gone. There was a fair movement of whistling swans over the refuge during April but ice covered the feeding areas and there was little or no incentive for them to stop in except for a short rest.

During the last week of October the first movement of swans was observed. This built up to a high of 110 birds during the first week of November. Numerous flocks of up to more than 200 whistling swans were seen passing over the refuge after the water areas had frozen over on November 4. These flights continued until the middle of the month but none of the birds stopped at the refuge. Total swan days' use for 1967 dropped from 2,100 the previous year to 1,925.

2. Geese:

Going into the period on January 1, there were 11 Canada geese remaining on the refuge. These birds used the open water below the lake outlet and at the springs adjoining the south end of the Rice Lake dike. Some exercising flights out of the refuge also occurred and a pair of Canadas spent some time along the Rice River south of the refuge. A bobcat moved into the spring area and picked off two of the geese before it was trapped by Mr. Thornbloom. One of these was a pinioned bird, the last one noted on the refuge. One

more goose disappeared during the winter but no evidence of it was found. At the time of arrival of spring migrants, eight of the original 11 Canadas appeared still in good condition. During the period of several months of snow and cold weather, these birds subsisted largely upon rough fish taken at the lake outlet during rescue of game fish. These were primarily small perch, suckers and bullheads which the geese would eat with apparent great relish. Some corn was provided when it was decided that these few birds would not migrate but often this corn was ignored for days at a time while the geese fed heavily upon the fish. Live fish were preferred and the birds got into the habit of waiting for the fish crew to get them a new batch which they would pounce upon immediately as the fish were dipped from the trap. The geese would first crush the small fish from head to tail and then proceed to tear them to pieces before eating them.

The first migrant Canadas arrived on March 24, when 19 of them swung in at 4:30 p.m. By the following day there were 41 of them at the lake outlet and 44 were seen on the 26th. In contrast to previous behavior, these birds were extremely wild and could not be approached. Somewhere along the line they received some survival indoctrination. On April 2, the first small Canada was noted in the company of 125 large ones along the Rice Lake dike.

Most of the geese were paired and the males were acting belligerent with each other when they arrived on the refuge on March 24. Selection of nesting sites was very rapid and birds were defending these sites within a couple of days. By April 18, birds were noted on their nests though some pairs had not yet begun to set. The lower water elevation may have had considerable effect on the nesting site preference this year but it also appeared to work against the geese to some extent. During the past couple of years the birds have preferred the windrowed brushpiles which were some distance from the nearest land and were surrounded by flood waters. In 1967 the waters did not reach many of these brushpiles and the geese chose the dirt islands for their nests in most cases. Since these were closer to shore and close to each other they formed a concentrated group rather than the usual widespread nesting pattern. About halfway through the incubation period raccoons discovered this setup and destroyed seven nests on adjoining islands in the old goose pen area in one night. Three other nests on islands within a few feet of the shore were also found destroyed. A year ago only one case of predation was noted, though it is felt the raccoon population was just as great as in 1967. Although nests on the brushpiles in previous years appeared precarious, conspicuous and

in danger of flooding, they were apparently isolated enough to escape predation and were highly successful. The successful nests in 1967 were those more isolated sites. All small impoundments on the west side of the refuge were successful in bringing off Canada goose broods; some were used for the first time for nesting in 1967. Refuge production of 100 young Canada geese was half that of the two previous years but considering loss to predators and the fact that about half of the normal refuge flock nested off the refuge this past year, this is still a good showing. One pair of geese was observed inspecting an artificial platform in the Rice Lake pool but they chose to nest in natural habitat nearby. It was especially gratifying to note a goose brood raised on the small Hilltop Pool built during the fall of 1966. An especially late brood of six Canadas hatched on June 22, more than a month later than is usual.

With regard to those birds nesting off the refuge; it has become apparent during the past couple of years that more and more Canada geese of the refuge flock are finding outside areas attractive to them as nesting habitat. With the many small lakes, bogs, rivers, beaver ponds, etc. that are common to this general vicinity, most of it very wild in character, this distribution is not surprising and is actually quite desirable. The success of the establishment of Canada geese here is apparent when more and more of the birds are demonstrating a warier attitude and are using new breeding habitat. Although about half of the refuge flock is estimated now using outside areas, most of these birds move into the refuge during the early fall. Outside feeding flights are fairly common but the refuge is still the main concentration point. Even the refuge summer residents no longer permit the close approach of a couple of years ago and are much more secretive with their goslings. Although this makes viewing of the young geese a little more difficult, it also makes the experience more rewarding and certainly it is more desirable than having them dodge the automobiles and take an occasional casualty along the entrance road. Broods could still be seen in the vicinity of the bridge during the spring and summer months. This was a favorite viewing area during the entire period when Canadas were present on the refuge.

Data gathered through contacts with local residents have been mapped and recorded. These indicate a known nesting radius of approximately 15-20 miles from the refuge. Although some landowners were reluctant to divulge information relative to geese using their properties, 20 pairs were located and four broods authenticated. It is hoped that through publicity and further legwork that this data can be expanded in the future to further substantiate and evaluate the success of the Rice Lake goose project.

The summer population of Canadas on the refuge ranged from 200 to 300 birds as most of the refuge production was on the wing by some time in July. As early fall approached, another 200 of those spending the summer mostly outside of the refuge moved in. This was in early September. Migrants began moving in during the 29th day of September when several Canadas dropped into the refuge. Several hundred arrived on October 1. The peak of 1,200 large Canadas was equal to that of the previous year. At the end of December only two remained on the refuge, a pair that gave indications they would like to spend the winter right where they were.

Small Canadas are not normally numerous in this area but a fair number are usually harvested west of the refuge during the waterfowl season. In 1967 the spring migration showed a peak of 10 during April. They had departed by April 22. This compared with 100 during May of 1966 when they were present through the end of that month. However, in 1967 there was a movement of 150 small Canadas into the refuge during the last week of September and they had built up to a peak of 300 by mid-October. They had all left the refuge by October 21. The arrival and departure dates were nearly identical the previous year but in 1966 the peak was 100 birds, showing a nice increase for this past year.

It is interesting to speculate on the various status views on the blue and snow geese as they follow their traditional activities. In spite of the theories, for the present at least, the blues are predominant on this refuge during the spring and the snows take over in the fall. They arrived during the last week of April and had departed by the last week of May. Although the numbers were small, the peak of 150 blues outnumbered the 50 snows. Several flocks were noted passing over the refuge but in their usual fickle manner they were not ready to stop at this point. The first fall migrants came in on September 17. They continued to build up to a peak of 5,000 snows and 500 blues during the week of October 8-14 when many flocks were passing over the refuge and some found the agricultural units and aquatic beds to their liking. Some stayed only a short while and by the following week a drastic drop in population was noted. By November 4, the day which the lakes and rivers were frozen over, the last 500 snows left the refuge. The blues had left the previous week.

In spite of a lower summer refuge population of Canadas because of increased outside nesting, the total goose use rose by 3,584 days. This was primarily due to increased use by snow geese which showed a 100 per cent peak rise. The peak of blues dropped by 100 per cent.

GOOSE USE DAYS 1963-1967

USE DAYS

200,000
190,000
180,000
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000

1963

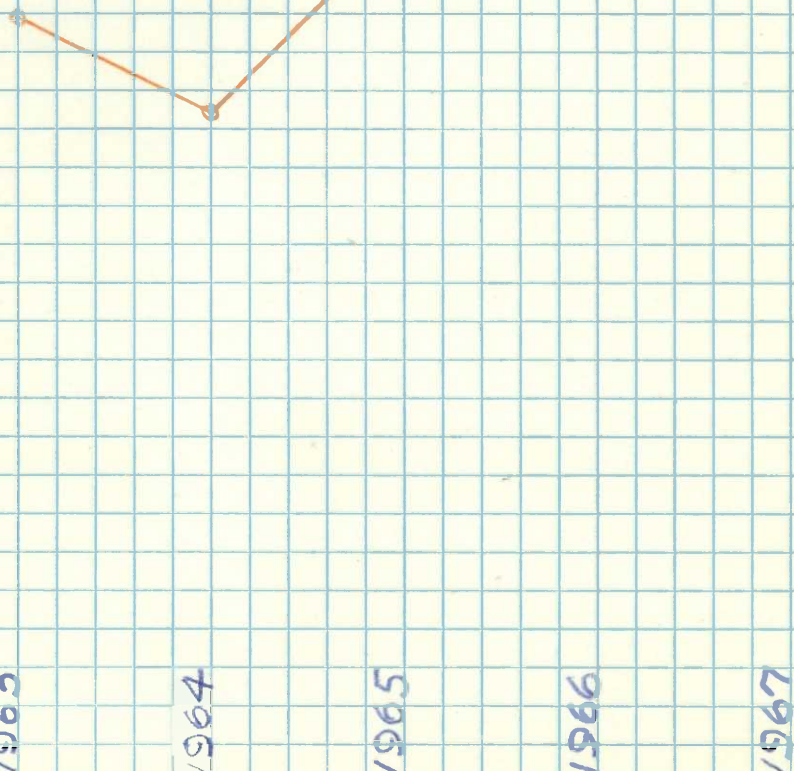
1964

1965

1966

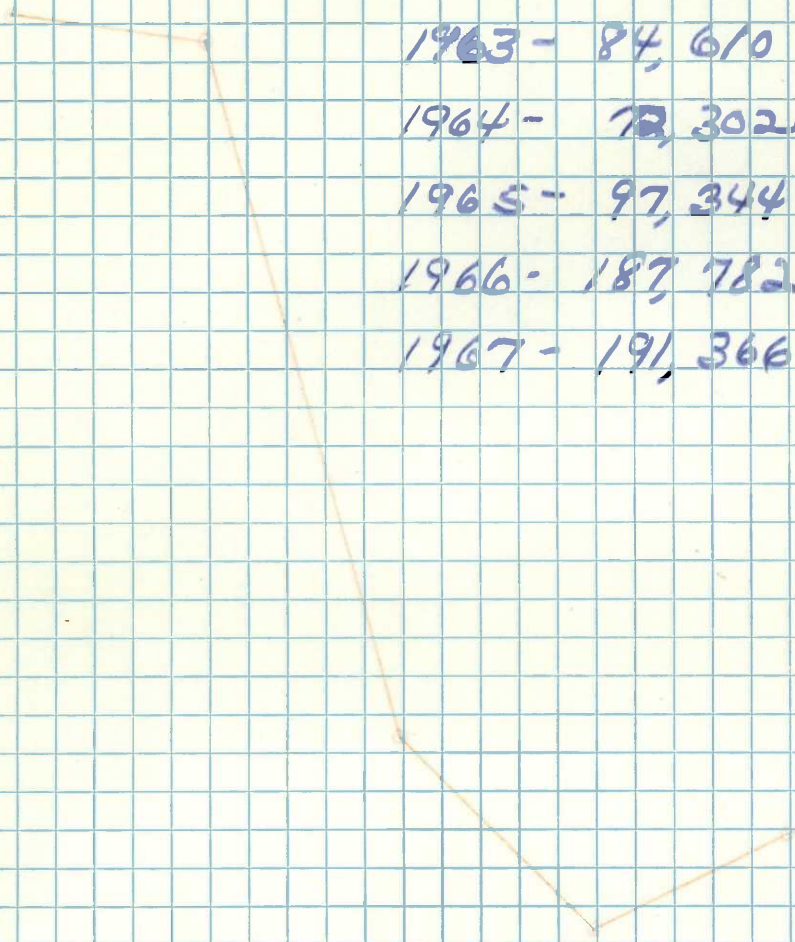
1967

YEARS



GOOSE UZE DATA 1963-1967

1963 - 84, 610
1964 - 72, 302
1965 - 97, 344
1966 - 187, 782
1967 - 191, 366



DATA 321

3. Ducks:

Although most species of ducks arrived slightly earlier in 1967 than in the previous year, total days' use for the spring period dropped by over 38,000. The bulk of this decrease in use was attributed to lower populations of mallards and black ducks, both of which were over 100 per cent down in total days' use. Shovelers took a heavy drop but this is not normally a common bird here. Another of the more common ducks which showed decreased use by nearly 66 per cent was the wood duck. No canvasbacks were noted as compared to 1,050 days in 1966 and scaup use was down nearly 20 per cent. Common and red-breasted merganser use was down about 70 per cent and the summer resident hooded merganser showed 100 per cent less use.

Other species of ducks showed a more promising side even though they did not make up for the mallard and black duck drop off. Widgeon were up over 100 per cent in use days; pintails about 20 per cent and greenwings over 300 per cent. Bluewings showed a third more use than the previous year. Redheads showed light use of 70 days but this was 70 more than in 1966. Ringneck use was up nearly 300 per cent; goldeneyes nearly 10 per cent and buffleheads up 66 per cent from a year ago.

Summer use by ducks continued the trend set by the spring migration and all species remaining on the refuge during the summer months showed reduced use from 1966 except green-winged teal which registered 8,400 more use days. Total duck days' use was down 368,970 from the previous year. The bulk of this drop in use could be attributed to mallards, which lost 90,000 days, widgeon 26,000 days, bluewings 108,000 days, wood duck 40,000 days and scaup 58,000 days. These figures are not indicative of a calamity but chiefly reflect conditions which held more migrants and held them longer than in 1966. When we examine and compare summer peak populations, though there is some drop, again primarily with mallards and blacks, most species were near, at or even above those of the previous year. Since 1966 was what might be called a fairly high year, this past year's figures are good. Mallards, blacks and bluewings showed the greatest drops in production but widgeon, greenwings and hooded mergansers showed encouraging increases. Total ducklings produced was just 320 less than in 1966 and 150 more than in 1965. The first mallard brood of seven was seen on May 23.

During the fall period the mallard and black duck again bore the bulk of the drop in peak population and they also showed a drop in total use for that period. In spite of this, the peak duck population during the fall was only 300 fewer than

in 1966 and the total days' use increased by 232,470. Besides the mallards and blacks, only pintails, green-winged teal and ruddy ducks showed slight declines in peak and total use. All other species showed higher peaks than a year ago. The wild rice remained a powerful attractor. It was interesting to note the decrease in green-wings when this species showed increased use during both the spring and summer periods. Widgeon peaked at 15,000 as compared to 5,000 in 1966 and ringnecks showed a peak rise from 25,000 to 30,000 birds. This made widgeon as common as mallards. Hooded mergansers became the seventh most common species during the fall with an unusual peak of 2,000 birds.

Total duck days' use for 1967 was 2,745,225 or 174,622 down from the previous year. As mentioned above, the bulk of the decreased use was reflected in mallard and black duck populations.

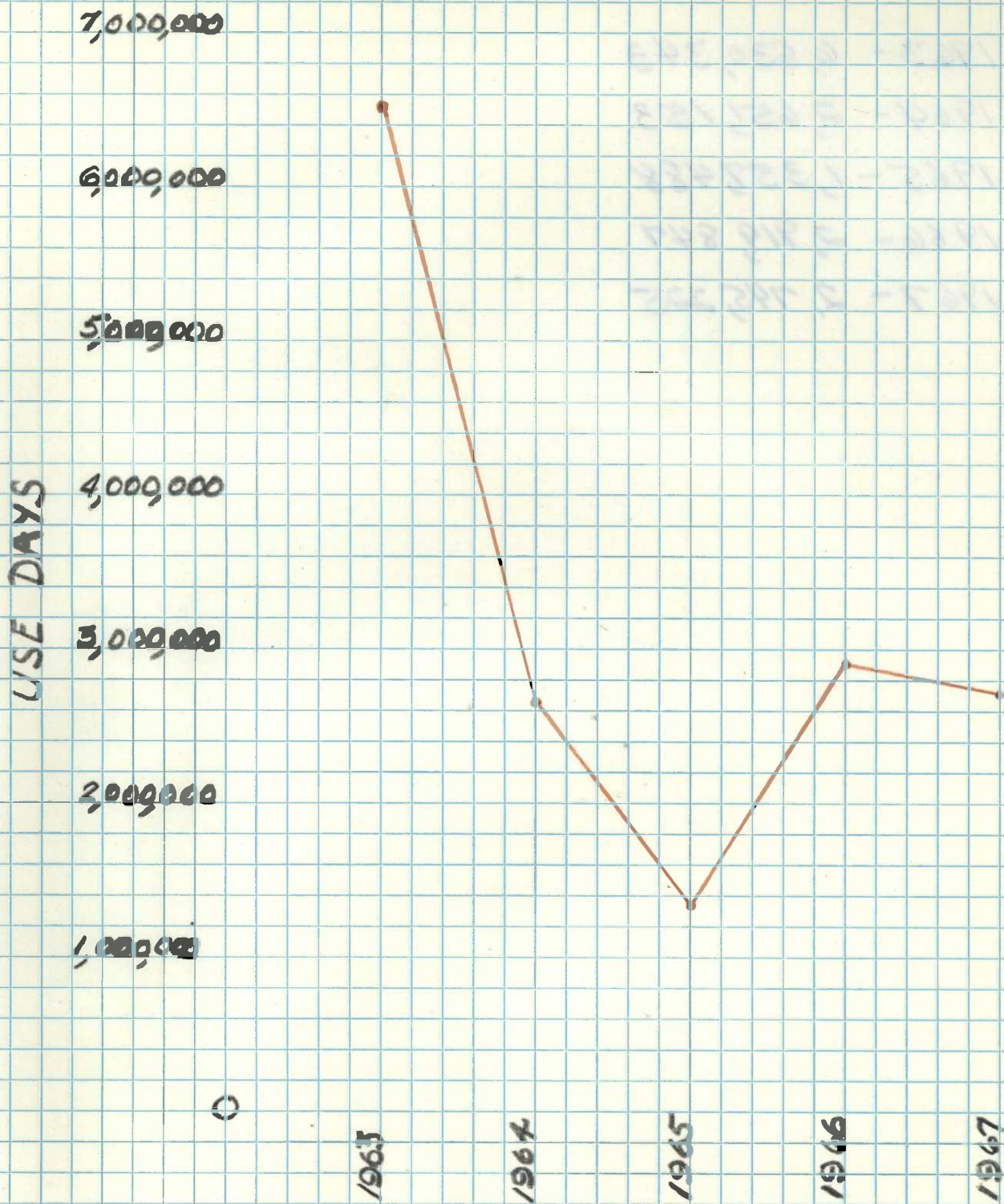
4. Coots:

The first coot noted on the refuge during the spring was a single bird at the outlet of Rice Lake on April 18, about a week earlier than a year ago. The spring and summer population was about the same with a peak of 500 leveling off to 100 birds.

Production of 50 young showed no change. During the last week of August there was a movement of several hundred coots into Rice Lake and by the following week there were 1,500 on the refuge. The peak of 20,000 coots, nearly all of them on Rice Lake, came during the second week of October. This was equal to the high for 1966 and the total days' use of 465,850 was within 350 days.

5. Other Water Birds:

Among the other water birds using the refuge, the first to arrive were the Great Blue Herons. These birds normally arrive prior to breakup. Eight were first noted at the Rice Lake control on March 24. The colony on the island in Rice Lake had 50 active nests which produced 150 young herons. The last one observed on November 7, was the last of the other water birds to leave the refuge in the fall. Pied-billed grebes were first seen on March 30, and they remained on the refuge throughout the summer and fall as one of the refuge nesters. They were last seen on October 23. Three belted kingfishers were seen on April 16. They were summer residents on the refuge. Three common loons arrived to nest on April 17. The cry of these birds could be heard daily at the refuge headquarters as they nested on Mandy Lake. Next to arrive on April 24, was one



■ DUCK USE DAYS 1963-1967

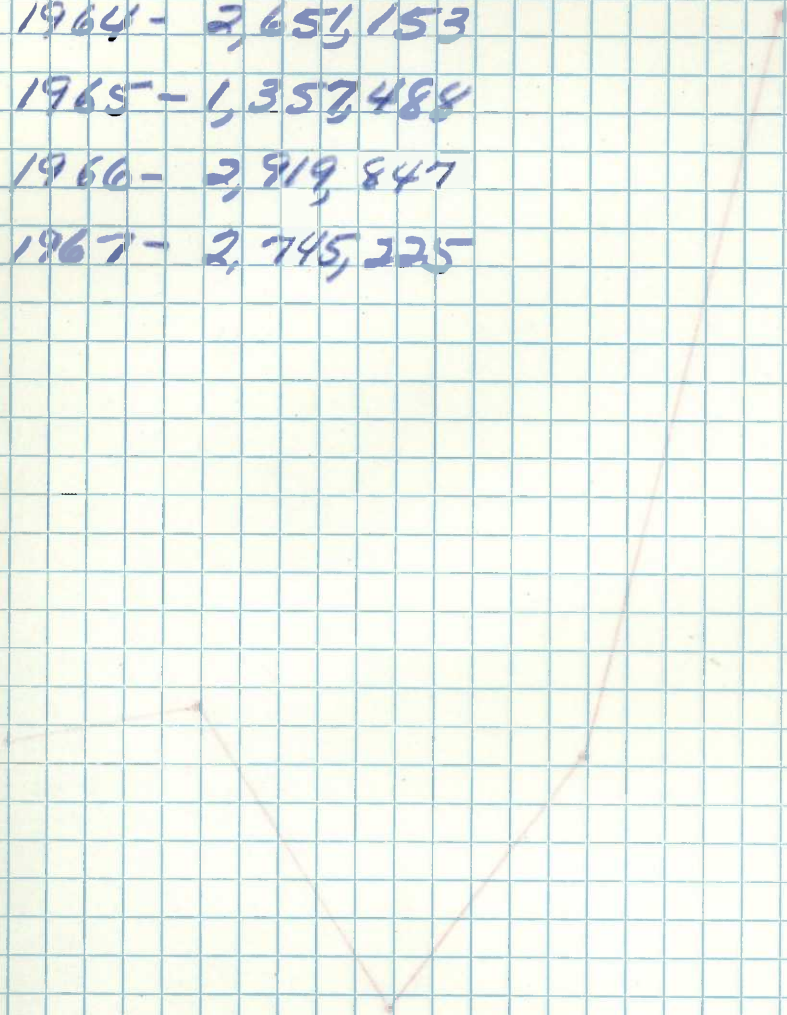
1963- 6,530,343

1964- 2,656,153

1965- 1,357,488

1966- 2,819,847

1967- 2,745,225



USE DAYS

8,000,000

7,000,000

6,000,000

5,000,000

4,000,000

3,000,000

2,000,000

1,000,000

0

1963

1964

1965

1966

1967

WATERFOWL USE DAYS 1963-1967



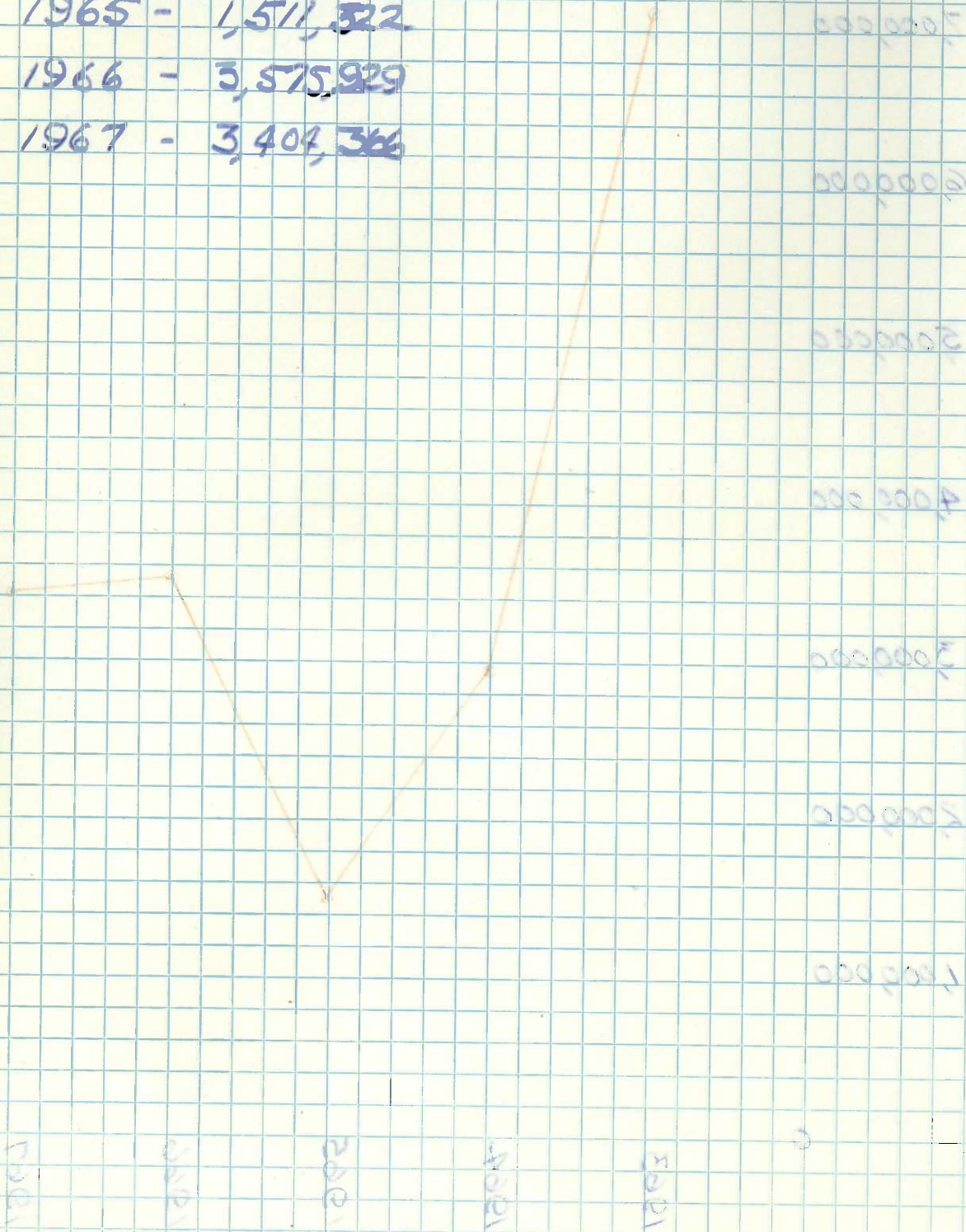
1963 - 7,112,175

1964 - 2,947,010

1965 - 1,511,322

1966 - 3,575,929

1967 - 3,404,366



WATERFOWL USE DATA 1963-1967

common egret which remained only a couple of days and moved on. Two other egrets were summer visitors. An unusual migration stopover for this refuge was a flock of 275 horned grebes which came in on April 26. They remained into early May and then departed from the refuge. Their peak population was 300. Normally only a few of these birds visit Rice Lake. Later migrants which became summer residents again included American bitterns, least bitterns, sora and Virginia rails. Soras were especially common in the rice on Rice Lake September 1. Sandhill cranes again nested on the refuge and they could be occasionally seen and often heard until the last day of October. The peak for the year was eight but four was the normal summer population. Double-crested cormorants which were once common nesters on the refuge were only occasional summer visitors in 1967.

6. Shorebirds, Gulls and Terns:

Killdeer were the first of the shorebirds to appear on the refuge, coming on March 30, when winter had not yet left the area. These birds nested commonly over the refuge. Common snipes were just that from April 8, throughout the summer. During August and September they were especially abundant with up to a thousand noted in moist, shortgrass areas. Their winnowing in April and throughout early summer is one of the attractions of this area. Fair numbers of ring-billed gulls and herring gulls frequent the refuge from the time the first winter-killed fish are available in the spring until September and October. Although this area is not generally blessed with heavy stopovers by shorebirds, the low water levels of 1967 brought some excellent concentrations when mud flats were exposed. One such flight dropped into the refuge on May 18, and presented the opportunity to view species not on the refuge bird list, some of which have been picked up during the past couple of years. It was also possible to see some of the species not commonly noted though previously recorded. Among these were the semi-palmated plover, Hudsonian godwit, long-billed dowitcher, and least sandpiper. The more commonly observed species were present in fairly good numbers. Again on September 27, there was an influx of over 5,000 shorebirds. Golden plovers have been observed on several occasions. Another unusual observation for the refuge, not previously recorded, was two immature Bonaparte's gulls on Rice Lake September 17. Black terns and common terns were present in fair numbers as nesters and remained until September 19, when they were last observed on the refuge.

B. Upland Game Birds:

The single hen pheasant present along the main refuge road during the fall of 1966 remained throughout the winter and summer of 1967. No other ringnecks were seen.

After an excellent winter with adequate roosting snow and a good spring for nesting, ruffed grouse took a substantial upward swing and hunting around the refuge was good during the fall. Ruffed grouse were drumming on April 13, and several drumming logs were located. Broods were later observed in these areas. By late fall these birds were occasionally noted budding in the birches.

Although known previous dancing grounds were checked several times during the spring there was no evidence of sharp-tailed grouse using them. Since small groups of sharp-tails were seen throughout the summer on or near the west fields, it is assumed that those few left are dancing off the refuge. Total observations during the summer include six at the fields (seen several times together or singly), a group of six and a group of eight in other parts of the refuge. Good conditions for wintering and nesting may have brought about a slight promise of increase in this area as several were noted in other places but the over-all picture is not yet promising.

Again, no woodcocks were tallied on the spring singing routes and no nests were found on the refuge. An occasional bird was noted during the summer but they were far from common. A brief flight of fair proportions passed through this area in October but again, very few of the birds used the refuge.

C. Big Game Animals:

White-tailed deer had a very good winter and no problems were noted. One fawn which was wounded in the foreleg during the hunting season was seen regularly until mid-winter. The spring fawn crop was heavy to twins. In the late spring and early fall it was not unusual to observe 50 or more deer on a tour of the refuge in late evening. It was almost a daily ritual for many of the local residents to drive through the refuge to observe wildlife but primarily to see the deer. Browse was good and it was available to the deer throughout the year as they were able to range about for it. Although hunting conditions were not the best due to lack of good snow cover, the harvest was adequate to keep the deer herd in good balance with the food supply.

Moose used the refuge occasionally but generally only in passing through. A small bull was noted by one of the hay permittees and

local farmers on the west side of the refuge in August. On the opening day of the deer season, November 11, a local farmer reported a large bull also on the west side. Tracks were seen along the east side of Rice Lake but no animals were observed there.

Sightings of black bears became a fairly common occurrence during the summer of 1967 and one woman fisherman decided to go home when a bear stopped to take a drink from the river near where she was fishing. One group of five was seen and from one to four were noted both by refuge personnel and visitors. Very few of the oak trees on the refuge with an acorn crop escaped some working over by bears. Trees with many broken limbs are a common sight. One bear was wounded during the gun season and was later observed by two different parties of hunters. The second time it was seen it was able to move swiftly and appeared to be recovering.

D. Fur Animals, Predators, Rodents and Other Mammals:

The mink population remained fairly stable. Observations around water controls were made on several occasions as these were favored fishing areas. Several were taken and released in live-trapping operations near duck traps.

Muskrats made a good comeback in 1967 and houses were fairly common on Rice Lake. The fur prices were down and there was no interest shown by trappers. At present prices trappers feel that they must have all of the furs in order to make it worthwhile.

Otter numbers on the refuge also remained stable. Because of their wide-ranging habits, the increment is usually taken off as they leave the refuge, especially along the Rice River. They are not considered numerous enough to warrant trapping in the refuge and they do provide an extra thrill to some refuge visitors during the spring when they can be seen along the river.

Low water levels and lack of precipitation kept the beavers in areas of permanent water supply where they assisted in retaining the limited water available. Although the refuge population is considered adequate, their activities at present contribute to the management of refuge habitat and no harvest is planned. Certain lodges and dams serve as study areas for Conservation Center classes and other nature study groups.

Weasels are fairly common on the refuge. They are of little or no interest to trappers.

Red foxes exist in moderate numbers on the refuge and control is exercised as needed.

Coyotes were seen occasionally during the summer on and near the farm units. Their calls could be heard during winter nights and from one to three were observed on the ice of Rice Lake from time to time.

Raccoons continued very common on the refuge and control was carried out in the vicinity of duck traps. More than 50 were taken at these sites. Predation on goose nests during the spring made control measures necessary there also.

Badger workings were noted occasionally but the animals themselves were rarely seen. Their number on the refuge is low.

Bobcats were present in moderate numbers. One was trapped because of predation on Canada geese.

Striped skunks were seen mostly along the dikes and around agricultural units where they are fairly common. Control was carried on as necessary.

Porcupines are well-distributed over the refuge. Limited control was necessary where they were causing severe damage to white pines on bog islands.

Red squirrels were common on the refuge but grays were still down somewhat. Fox squirrels were rarely observed.

Striped and Franklin's ground squirrels were present in fair numbers, as were chipmunks.

Meadow voles took a considerable jump in population, possibly due in part to the dry conditions of both upland and marsh. They provided much food for predatory species and held the hawk migration in this area much later than usual. Deer mice, shrews and star-nosed moles were also quite common.

Stray cats were taken care of as the opportunity provided.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies:

This past year was an unusual one with regard to use by hawks. Most of the species which normally use the refuge to some extent were much more common throughout the year than is normal. During the summer months it was not at all unusual to see several marsh hawks over the marsh at any time. They were present through the end of the year. Much dry marsh permitted an explosion of meadow voles which proved an attraction to most winged predators. Sparrow hawks were also noted often and during the early fall migration as many as 60 per day were seen. Red-tailed hawks were common summer residents and also showed considerable increase

during the fall migration. Cooper's, sharp-shins and goshawks, though more secretive, were observed regularly. Broad-winged hawks were much more common than usual and several frequented the headquarters site throughout the summer. Roughlegs were most common during the fall and winter months. Sometimes a dozen or more would be working a particular piece of marshland and it was only a short wait to see one or more of them capture its prey. The entire fall migration was not only spectacular in numbers but, partly due to delayed snow cover, was one of the most extended movements in some time.

Ospreys were again summer visitors but did not nest on the refuge.

Northern shrikes were common throughout the winter months with several being seen some days. Their skill at capturing and impaling a mouse was noted on at least two occasions and one was seen tearing and eating a mouse that was still kicking. Meadow voles were hung about the refuge by shrikes, most of them in crotches of willows or other small shrubs and trees.

Rough fish on the ice of Rice Lake again attracted the first bald eagles to the refuge. Although these birds make occasional winter visits to the refuge, it was not until February 16, that the first two adult birds began to appear regularly on the ice. Most of the bald eagles observed on the refuge from early spring until the end of the year were immatures. Only during the very early spring and the late fall were more adults noted. The spring movement showed the lowest population with a peak of only seven eagles. During the early summer and fall there were groups of up to 15 seen along Rice Lake where carrion might most likely be available. From the two nests located on the refuge there were two young raised. No casualties were noted.

Barred owls remained the most common of these birds on the refuge but there appeared to be some decrease in numbers. They were not seen or heard as often as the previous year but often enough to assure that there is still a good population. Great horned owls appeared slightly more common than before and were seen much more often. Screech owls were seen and heard occasionally. No hawk owls were noted during the winter. Saw whet owls were present in small numbers. Snowy owls were occasional visitors and no great gray owls were recorded.

Crows were very common from late January until near the end of the year. There are normally only a couple of months when this species is not present. Ravens are year-round users of the refuge. They were most common during the fall.

Magpies were only occasional visitors to the refuge during the fall.

F. Other Birds:

Evening grosbeaks were common feeders at the refuge headquarters. Purple finches were less common than a year ago, though they nested on the refuge during the summer. Pine siskins were again common but pine grosbeaks were unusually scarce in spite of good seed crops on the ash trees. Purple martins which normally fill the 75 rooms of the three houses, were down drastically in 1967. Only about a dozen pairs used these houses and the rest were really missed. Tree swallows, Eastern bluebirds and house wrens nested in the housing provided for them and a few barn swallows used housing not provided for them. Mockingbirds, considerably out of their range, were seen on several occasions during the early summer. Another new record to the refuge bird list included red-bellied woodpeckers which fed at the headquarters feeders throughout the fall and were still present at the end of the period. Gray jays were again occasional visitors as they drifted down from the north. This area is marginal for that species. For the second year, only one whip-poor-will was heard, this one on May 29, compared to June 13, last year. It was again a pleasure to feed the Ruby-throated hummingbirds from May through late September when one would think they would be long gone for the South. Other birds appeared to be present in about normal numbers compared to previous years.

G. Fish:

The fish run in the river was of short duration as far as stocking Rice Lake was concerned. The control at the lake outlet had to be kept closed through most of the spring and all summer and fall until November when rescue operations began. An excellent population of northern pike kept people coming back for more all summer even though the general run were not of large size. It was also interesting to note the distance that some people will travel for the lowly bullhead while ignoring the northerns, wall-eyes and panfish locally available. This was especially true off the refuge. Most refuge fishermen are northern oriented.

The fish rescue operations were conducted by the Minnesota Fisheries personnel as in recent years. All fish were taken to lakes in this general area, usually within 50 miles, and stocked to augment existing populations, control panfish and generally to provide more recreation and food for local residents and tourists with fish that might otherwise freeze out and go to waste. With low water and excellent aquatic conditions the hatch of northerns was high and the growth amazing. The largest fish taken during the operation was a brood fish of about eight or nine pounds. Some four to six pound fish were removed. The operation began, as usual, with traps in running water at the

lake outlet. As soon as ice depth permitted, lead traps were placed in Mandy and Rice Lakes. When the outlet water went dead, the pumping station on the Rice Lake island was manned. That station went dead on March 3 when the lake elevation was higher than during the past fall which may mean an earlier end in 1968. The fish quit running several days prior to termination of operations and the crew felt that they had done a fairly thorough job of rescue. Some rough fish were used as fertilizer on walleye rearing ponds, some were used by local residents and some very small fish were a source of food for foxes, coyotes, ravens, crows, magpies and other refuge dwellers. If things go as usual, some will also provide a source of nourishment for early arrival bald eagles and for gulls in the springs. Canada geese consumed their fair share. The general run of rough fish; bullheads, yellow perch, suckers and small buffalo was not as heavy as some past years nor did these fish run to the larger sizes. An estimate of five tons of rough fish was given for November and it would average many hundreds of pounds per month.

The late winter operation ended up with 36,925 northerns for a total weight of 8.5 tons. The early winter operation which started on November 3, had taken 22,579 northerns weighing 19,402 pounds by the end of December. Thus for the year, 59,504 northerns weighing 36,402 pounds were put to good use in stocking local lakes. Most of these fish were young of the year. At the end of the period the run was still good but lack of funds prevented keeping a round-the-clock crew going as in the winter of '66-67. This might have some effect on the total take which at any rate should be very good. At the outlet some days brought 1,200 or more and the traps were not completely emptied. The island yielded up to 1,800 per day at times and fell off on others depending upon oxygen conditions which varied with sunshine.

H. Reptiles and Amphibians:

The usual garter snakes, snapping turtles and painted turtles were common on the refuge. Spotted salamanders were noted fairly often. Leopard frogs, mink frogs, copper frogs, spring peepers, tree toads and common toads were all very common.

I. Disease:

No disease was noted to affect the wildlife of this refuge. A male redhead duck which appeared to be weary was captured on Rice Lake one day and released the following day. It flew strongly and appeared to be in good condition.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

The dry weather was a boon in many respect, making it possible to work areas normally too wet for access. Many jobs of a routine nature were taken care of during the year. These include blading and fill on roads, plowing, mowing and other work of that nature.

Second growth aspen and willow was removed from a large area of the Rice Lake shoreline and adjacent to the Rice Lake Pool dike. Brush was removed from all islands in the old goose pen as this had grown to excessive height. A firebreak was started at the pole building.

Thirteen new potholes of varying size were built adjacent to the west fields and will utilize runoff from both the Hilltop and West Field Pools as a source of part of their water. Spoil was seeded to alsike.

Repairs were made to both banks below the Rice River control and eroded ditches were filled with field stone picked from agricultural units. This included 420 yards to the Rice River dam, 160 yards to ditch erosion plus 12 yards to the West Field control and four yards to the west parking area. This mass of 596 cubic yards of rock was not sorely missed from the farm units. Many more yards were picked and stockpiled along the hilltop field for later use.

Roadside banks were cut out and flattened and the road raised on the west end to combat snow problems. Gravel was hauled for this and other repair jobs totaling 196 cubic yards. Four culverts were installed. Three large stockpiles of gravel were made above normal ground water level.

Two miles of new fence was erected along Highway 65. New corners were installed on existing fencelines, repairs were made and some interior fences removed.

The pumphouse at the Miller tract was repaired and a pressure pump installed. The painting of the Miller storage barn was partially completed when stopped by cold weather.

The picnic area was the focal point of a large amount of improvement and maintenance work. However, local people would not pay the fee and the tourists have many other local facilities for their money.

Both new and old boundaries were rechecked and some clearing and posting done. Several gates were rebuilt.

At five old farm sites basements and old wells were bulldozed full and the sites landscaped.

A new catch basin and disposal field were installed at the headquarters wash rack.

All major signs were repaired and touched up. Six large Entrance and Recognition signs were built by Mr. Drone and four of these were erected prior to freeze-up.

Tower maintenance included replacement of a broken and rotted sash and installation of a large new caution sign.

Old pothole margins were cleared of heavy brush and shrub accumulation.

The last of the old goose pen was removed.

There were many other jobs of both major and minor nature accomplished during 1967.

B. Plantings:

1. Aquatic and Marsh Plants:

None.

2. Trees and Shrubs:

Three hard maples and three white spruce were planted at residence #68.

3. Upland Herbaceous Plants:

New pothole margins were seeded to alsike clover.

4. Cultivated Crops:

Usually cultivated crops here suffer from too much moisture coupled with cool weather during the critical month of June. In 1967 almost the opposite was true. Planting conditions were good and the following acreages were planted: Corn, 33 acres; buckwheat, 32 acres; oats, 49 acres; and rye, 32 acres for fall browse.

However, except for good rains received in June the rest of the growing period was extremely dry. Consequently, none of the crops received enough moisture and the yields were poor. The corn averaged 10 bushels, buckwheat 12 bushels, and oats 20 bushels to the acre. Even though the yield was poor all crops were heavily utilized by all forms of wildlife.

The rye planted for fall browse was planted at an ideal time to receive moisture from one of the few rains received. The rye was used heavily, especially by geese and deer.

Much work was accomplished the past year on the crop units such as rock removal, plowing and levelling. No doubt this will contribute to better crops in the future.

C. Collections and Receipts:

Another good wild rice harvest yielded a total pick of 85,695 pounds. Wild rice was again in short supply and this factor held the price way up. Rice Lake had very good stands of wild rice but low water levels made certain areas impossible to harvest.

A total of 46 boats, harvesting ten days during the period September 14-25, picked a total of 85,695 pounds of rice. The Government share of eight per cent amounted to 6,858 pounds. Cash return to the Government was \$11,424.63. The lowest price paid per pound of green rice was \$1.50 and the highest \$1.73. The average price paid was \$1.645. The average season take per boat (less the Government share of 8%) amounted to 1,714 pounds which at an average price of \$1.645 per pound gave each boat 2,819.53 for their ten days of work.

No doubt the Indians would have received a higher price for their rice but Rice Lake beds are among the latest in the State to ripen. A near-record harvest in the rest of the rice-producing areas left processors with an abundance of rice. This naturally lowered the price and the Indians thought the processors were taking advantage of them. Even so, they received an estimated 30 cents a pound more than other pickers received harvesting non-refuge waters.

There was the usual amount of trouble with Indians and liquor; people wanting off for a day or so as they were tired, or it was too windy, or their cousin was sick, or numerous other excuses.

It might be well to mention here that the Indian ricer has never had it so good as far as lake access, weighing procedures

and general operations. Prices have never been better and the bulk of the younger Indians sell all their rice instead of keeping a portion for food as in the past. But greed--or something similar--raised its ugly head during the last harvest season. Since rice prices began to soar, local Indians have shown more antagonism toward other Minnesota Chippewas with whom they do not want to share the Rice Lake harvest.

The local Indians, headed by one or two individuals, feel the local band should have complete control over Rice Lake, including manipulation of water levels and selection of pickers. To this end they assessed each local ricing crew \$100 to hire an attorney to plead their case. It is said that \$3,000 cash was collected under the threat that if they did not pay they would never rice in the refuge again. The attorney notified the Bureau of Indian Affairs and the Regional Office of their intentions. A brief meeting was held in the Regional Office between the Solicitor, Indian Affairs, R.O. personnel and the Refuge Manager. All parties were in agreement that the basic problem appeared to be greed and that the present method of administration of the rice growing and harvesting is in the best interests of both the wildlife and the Indians. It is both fair and equitable. No further information has been received to-date.

D. Control of Vegetation:

Considerable control of willow and second growth aspen was done with bulldozer, rotary mower and by hand tools along the north shore of Rice Lake, edge of the marsh at Headquarters and in the old goose pen area. Resprouting will be sprayed in 1968.

E. Planned Burning:

Due to conditions during the planned burning period it was impossible to follow the approved plan with the desired results. Peat fires were a prime threat.

F. Fires:

Refuge personnel helped with control and mopping up of a fire started by lightning on State property north of the refuge. Several peat fires required attention for about a week.

IV RESOURCE MANAGEMENT

A. Grazing:

Two permittees grazed a total of 35 animals for a total of 162.5 AUM's.

B. Haying:

Some haying units were left uncut this year in an attempt to benefit waterfowl nesting. These were offset in part by hay strips now available in the agricultural units.

Haying at its best is never too good. The dry weather the last half of June and July left a stunted hay crop which was far below average. The eight hay permittees cut a total of 216.5 tons of hay.

C. Fur Harvest:

Although a fair crop of muskrats were available for harvest no trappers applied for permits. The continued decline in fur prices discourages all but the dedicated trapper trapping solely for a hobby. Fur buyers in this area were paying \$.75 for good muskrats and \$12 for good buck mink.

Aside from the muskrats, furbearer populations did not indicate a need for trapping. The refuge was open for the trapping of all fur species with the exception of beaver and otter.

D. Timber Removal:

One permittee cut a total of 110.76 cords of aspen pulpwood. In addition he cut 197 cedar fence posts.

E. Commercial Fishing:

None.

F. Other Uses:

None.

V FIELD INVESTIGATION OR APPLIED RESEARCH

A. Waterfowl Banding:

The refuge banding program continued with the Dew Line banding operations. Banding of mallards and blacks got off to a good start the first part of August. Unfortunately, two things happened that scuttled our operations. One was the ripening of the wild rice crop and the other was the Indians harvesting the crop.

Once the birds began feeding on wild rice it is exceedingly difficult to entice them into bait traps. Also, due to the disturbance of the ricers in the rice beds the ducks desert the island trap completely for the duration of the wild rice harvest.

A few ducks were picked up at other banding sites around the refuge. Low water levels caused these areas to be less attractive than in past years. Raccoons were a serious detriment to these banding operations.

The following is a record of the waterfowl banded on the refuge during 1967:

Species	Hatching Year		After Hatching Year		Local		Total
	Male	Female	Male	Female	Male	Female	
Mallard	145	173	20	149	20	7	514
Black Duck	8	1	5	1	-	-	15
Wood Duck	-	1	-	-	-	-	1
G.W. Teal	1	1	-	-	-	-	2
Pintail	-	-	2	-	-	-	2
Redhead	-	-	1	-	-	-	1
Canada Goose	1	1	1	-	-	-	3
Common Snipe	-	-	-	-	-	-	4
Totals	155	177	29	150	20	7	542

B. Canada Goose Flock:

As discussed under Geese, Section II, Wildlife, the refuge flock continued to prosper and spread. This included use not only of new nesting sites on refuge waters but also on more outside areas.

Nesting by refuge geese is now established over a radius of 15 to 20 miles, though the refuge remains the focal point for spring and fall concentrations. Landowners and others familiar with the location of paired Canadas were contacted and twenty pairs were mapped. Although it was not possible to keep these widely scattered pairs under watch, four broods were definitely recorded. It was evident that some landowners were keeping the presence of Canadas on their lakes or sloughs to themselves and some were obviously missed. Publicity next spring may help in locating more of these birds through a local understanding of the purpose of this new study.

C. Artificial Nesting Sites:

1. Goose Platforms:

Although artificial goose nesting platforms have been available in choice habitat for two years, none were used. One pair of Canadas inspected an artificial site and nested on a natural one nearby. Several fiberglass structures were ordered for trial in 1968.

2. Duck Platforms:

Two fiberglass duck nest structures with flax straw nests were secured from Necedah and erected in two of the best production pools on the refuge. No interest in either of these was indicated by any species of waterfowl.

3. Wood Duck Structures:

Fiberglass wood duck nest capsules have been under test on this refuge for two years. The initial installation of 58 structures was made in 1966. Because of late delivery they were installed in early May when wood ducks were already present. These first capsules were translucent. It was hoped that the light would discourage use by other species. This feature, however, tended to camouflage the openings so they were not distinct as cavities.

This problem was checked in 1967 with the additional erection of 36 painted capsules in March and early April. The entrances were very distinct and the interiors, though darkened, were not totally dark. These were erected at various new locations and interspersed with the translucent structures.

It was interesting to note that neither ducks nor other wildlife used the translucent capsules except for one colony of wasps. However, all painted capsules were readily accepted by wildlife. Six of the 36 were used the first spring by waterfowl. All unpainted capsules were brought in for painting and all were gone over to correct undersized entrances due to a factory slip-up. No predator entry was in evidence. Two years of exposure to both winter and summer elements had no apparent effect on these glass structures. Further refinements are planned but due to the recent total destruction of the local fiberglass plant by fire, there will be some delay.

It was heartening to note the vote of confidence received on this new capsule. About 50 residents of the Aitkin area have purchased them for personal enjoyment through propagation of wood ducks on their own properties.

Thirty metal boxes built by the Job Corps are on hand for 1968 and a number of western cedar structures will be built by Mr. Thornbloom for further study and comparison.

D. Ring-necked Duck Banding:

A crash pre-season ringneck banding project was requested too late to be fully implemented but four special ringneck traps were built and set out on Rice Lake to supplement those already in use. There was less than a week available before the duck season opening so the birds did not even have time to start using the bait. The heavy rice crop would have affected use of bait at any rate since the birds use the wild rice heavily. The project will be pursued strongly in 1968 but complicating factors include; ricing operations on the lake through much of September when the first ring-necks arrive; preference of rice over any bait that might be used and arrival of the bulk of the ring-necks after the normal hunting season opening. This leaves very little time for the operation. Suspension of the ricing would be the best method of making this banding operation practical. It is felt that even without the rice harvest and the resultant disturbance to waterfowl over an extended period, the rice production would be no more than adequate for waterfowl food needs and reseeding of the lake. Heavy outside flights could very well be to seek food after refuge supplies run down. There is no question but what waterfowl use would increase tremendously without the rice harvest operation which keeps the birds off the lake during weeks of the critical time when migrants are normally setting up use patterns.

E. Rice Borer Study:

Three members of the Minnesota Department of Agriculture spent considerable time on Rice Lake from early summer until late fall on a study of the life history of the Rice Borer. They were sometimes accompanied by a member of the U.S.D.A. The refuge will be furnished with information gathered when the study has been completed. Apparently this is designed to supplement work already done in that field. The total effect on the wild rice crop by the larval stage of the Rice Moth has not yet been determined but it varies greatly from stand to stand. The seed is destroyed in the early stages. Rice Lake does not appear to have the infestation to the degree noted on some local areas.

F. Soil Mapping:

Work was done on getting the rest of the refuge soils mapped so the complete area can be classified. This will be a big help

in future management planning.

VI PUBLIC RELATIONS

A. Recreational Uses:

General sightseeing was the greatest attraction of the area even to local residents who know that they can see a few deer and maybe a bear or fox on a drive through the refuge. Geese also provided an opportunity to see wildlife under natural conditions. It is a common practice for local people to take out-of-town visitors for a refuge tour as part of their entertainment. Hunting and fishing also brought many people to the refuge. Although the picnic area was improved and well maintained, local people refused to pay the user fee and tourists could find more for their expenditure at the many local resorts or free use areas. Nature study groups, both formal and informal, made use of the refuge for educational purposes. Among these were the Long Lake Conservation Classes, 4-H Conservation Classes and Scouts. Much work was done by refuge personnel on personal time to further the people's interest in the refuge and in conservation.

B. Refuge Visitors:

See attached sheet 26-B

C. Refuge Participation:

<u>Group</u>	<u>Date</u>	<u>Participation</u>
Kanabec Conservation Club	1/25/67	Talk and slides
McGregor Boy Scouts	2/19/67	Work on sliding party
Riverside Liberty 4-H Club	2/21/67	Taught shop class
Riverside Liberty 4-H Club	2/21/67	Taught Conservation class
McGregor Flower & Garden Club	3/23/67	Made plans for McGregor beautification project
Riverside Liberty 4-H Club	3/27/67	Taught Conservation class and shop class
Aitkin Science & Biology Classes	4/4/67	Talk and films
Local residents & visitors	4/2/67	Tour & discuss operations
Aitkin Girl Scouts	4/4/67	Tour
McGregor Flower Club	4/14/67	Set up tree plantings and talk on refuge.
McGregor School-Grades 1-3	4/20/67	Talk & slides on maple syrup
McGregor School-Grades 4-6	4/20/67	Talk & slide on wild ricing
KKIN Radio - Aitkin	4/24/67	Radio tape

B. Refuge Visitors:

<u>Name</u>	<u>Organization</u>	<u>Date</u>	<u>Purpose</u>
Harry Pinkham	U.S.G.M.A.	1/5/67	Courtesy call.
Roy Skarbaka	Minnesota Highway Department	1/30/67	Refuge Boundaries.
R. Gould	Minnesota Highway Department	1/30/67	Refuge Boundaries.
Orville Schultz	Minnesota Forestry Service	2/3/67	Fire permits.
LeRoy Angell	Minn. Conservation Dept. Biologist	2/6/67	Wetlands Management.
Harry Pinkham	U.S.G.M.A.	2/7/67	Enforcement problems.
Chester Munson	Minnesota Fisheries Dept.	2/8/67	Fish rescue.
Forest Strnad	Inland Bird Banders	2/13/67	Banding records.
Ed Collins	Manager; Necedah Refuge	2/27/67	Waterfowl management.
John Kurtz	Manager; Mark Twain Refuge	5/6/67	Visit.
W. D. Carter	Manager; Sheldon-Hart Mountain	5/6/67	Visit.
L. H. Dundas	Staff Specialist - R.O.	5/17/67	Conservation Camp program.
Wm. Aultfather	Regional Forester	5/17/67	Conservation Camp program.
Ed Larie	Bureau of Outdoor Recreation	5/26/67	Fee areas.
Mr. Luhning	Fish Biologist, Warm Springs, Ga.	5/26/67	Visit.
Ed Collins	Manager; Necedah Refuge	5/26/67	Visit.
Clair Rollings	Staff Specialist - R.O.	6/19/67	Inspection.
Gary Kuyava			
R. Salmela	Entomologists - Minnesota Dept.		
H. Harden	of Agriculture	6/27/67	Rice worm study.
Dave Millar	Aitkin County Civil Defense Director	7/12/67	Check Radiological equipment.
R. Fredrickson	Minnesota Civil Defense	7/12/67	Check Radiological equipment.
C. Kinsey	Minn. Carlos Avery Game Farm	7/13/67	Ecology tour.
Bill Spauldings	Fishery Services - R.O.	8/3/67	Fish management.
Harry Pinkham	U.S.G.M.A.	9/7/67	Locate starlings for study.
George Rice			
Gordon Bartouch	WCCO-TV	9/21/67	Film ricing program for TV.
Wm. Ellerbrock	U.S.G.M.A.	9/22/67	Deliver projector.
Robert Jessen			
Kahler Martinson	Minnesota Conservation Dept.	10/5/67	Ring-neck banding.
C. Griffith	R.O. I&E Office	10/13/67	Tour and visit.
L. Saults	Washington I&E Office	10/13/67	Tour and visit.
John Gottschalk	Director; Washington	11/3/67	Tour and visit.
Walter Schaefer	Asst. Regional Director; Mpls.	11/3/67	Tour and visit.
R.E. Easton	Property Management - R.O.	12/20/67	Deliver surplus jeep.

<u>Group</u>	<u>Date</u>	<u>Participation</u>
Grades 1-4, Bellhorn Bay School	4/25/67	Talk and slides
Grades 1-4, Lawler School	4/25/67	Talk and slides
Riverside Liberty 4-H Club & McGregor Flower & Garden Club	4/28/67	Plant small sugar maple trees on McGregor boulevards
Visitors - Cloquet	4/29/67	Tour
Family from New Ulm	5/17/67	Photograph heron colony
Grades 1-4, Lawler School	5/19/67	Refuge tour
Aitkin High School Biology Class	5/19/67	Ecology tour
Fleming 4-H Club	5/20/67	Film and talk
Kanabec Conservation Club	6/6/67	Tour
Riverside Liberty 4-H Club	6/20/67	Field (Ecology) trip
McGrath School- Grades 1-8	6/27/67	Tour
Long Lake Cons. Center	6/28/67	Talk & field trip
Cromwell Elementary School	6/29/67	Talk & field trip
County Land Commissioners & Foresters	7/6/67	Talk and tour
Teachers & Minn. Cons. personnel	7/13/67	Talk and tour
Riverside Liberty 4-H Club	7/13/67	Taught Conservation class
Refuge visitors	7/24/67	Tour and talk
Long Lake Cons. Center	7/27/67	Demonstration, talk, tour
WCCO-TV	7/27/67	Assist w/photography setup on refuge for L.L. Cons. Center
Long Lake Cons. Center	8/6/67	Banding demonstration
First Aid Group	8/6/67	Teach class
Riverside Liberty 4-H Club	8/14/67	Instruct
Brainerd Vocational School	8/30/67	Contact re equip. repair
Ricing observers	9/16/67	Information re operations
Indians	9/16/67	Rice Harvest
Rice Researchers	9/16/67	Information
WCCO-TV- Ricing film	9/21/67	Setup and guide on lake
Coop. with State Forestry- Fire	9/26/67	Equipment, men, etc.
Minn. Rec. Question Meeting	9/21/67	Information
Aitkin County Civil Defense	9/29/67	Participation
Riverside Liberty 4-H Club	10/1/67	Achievement Day
County Welfare Agency	10/9/67	Info. on ricers
Local duck raiser	10/10/67	Info. on trapping ducks
Riverside Liberty 4-H Club	10/25/67	Conservation information
Riverside Liberty 4-H Club	11/4/67	Conservation information
Adult Ecology Class- Aitkin	11/6/67	Arrange films & talk
R.C.&D. Planning Group	12/1/67	Attend Organizational Meeting
Aitkin Lions Club	12/6/67	Talk and slides

In addition there were many small refuge tours for visitors.
 Mr. Thornbloom taught American Red Cross First Aid classes.
 Mr. Pospichal kept bird records for the Minnesota Ornithological Union.

D. Hunting:

1. Deer Hunting:

During the refuge gun deer season the hunting pressure was up slightly and total kill also took a slight rise but the success ratio dropped a few points from last year. The season total of 1,185 hunters took 164 deer for a success ratio of 13.83. This figure varies little from year to year. The previous year it was 16.7 per cent. Hunting conditions were considered tough during the 1967 season since there was little or no snow and cover was heavy. The deer were rather adept at playing tag with hunters who could not push them out. The total harvest was adequate and the deer went into the winter in reasonable numbers and with excellent food conditions.

The opening day pressure was the most dense when 225 hunters took 60 deer for the highest success ratio of any day of the season, 26.6 per cent. Because of hard hunting conditions the kill was spread out more evenly throughout the season than is normally the case but half of the total take was still on the opening weekend. By the second day the ratio was 11.1 per cent and the low daily success ratio was 7.6 per cent.

No hunters used the refuge during the December bow season which again emphasized that this season is not worth the posting and patrol efforts and cost expended.

2. Waterfowl Hunting:

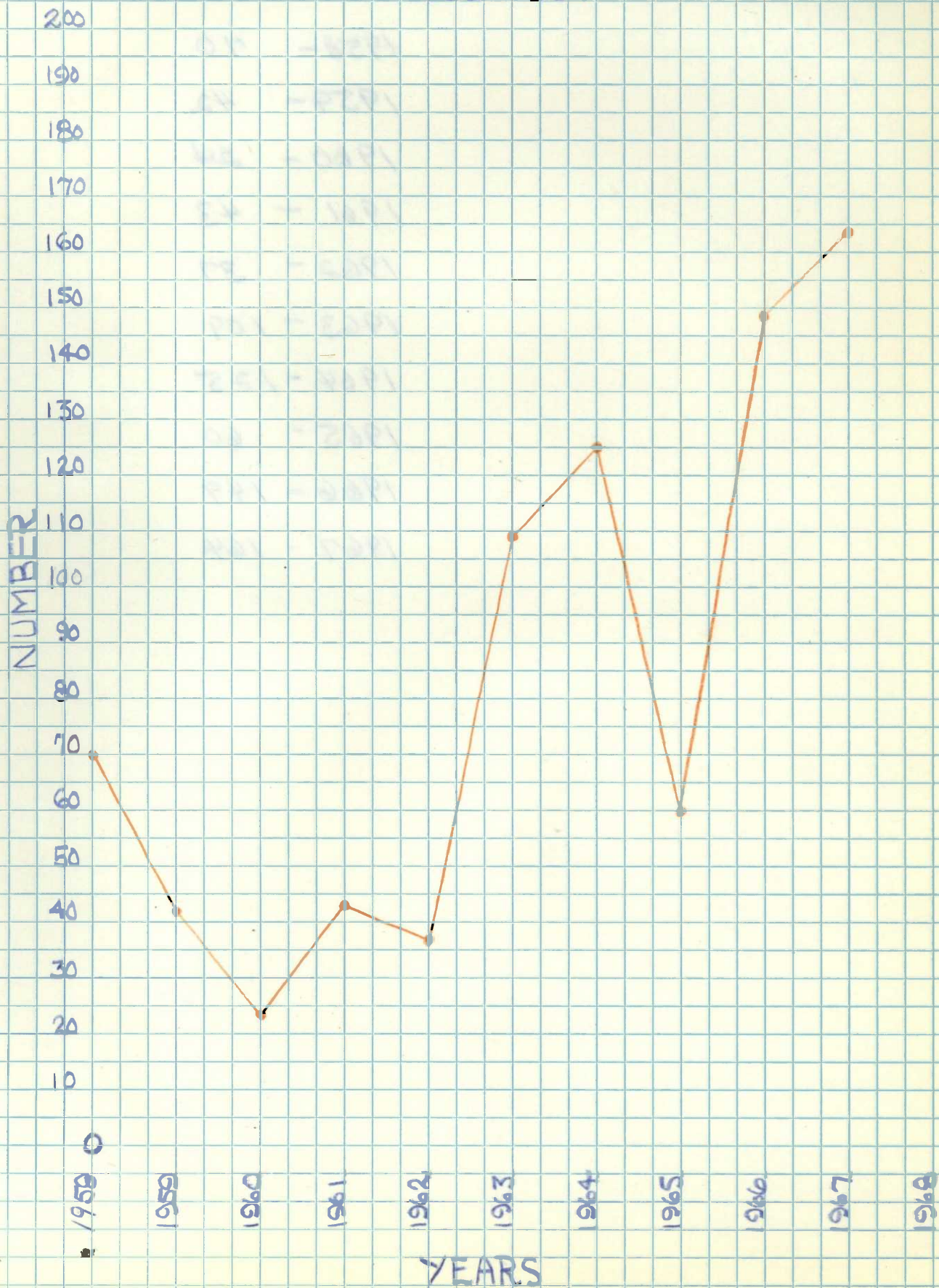
With this entire vicinity suffering from dry conditions many of the normal duck hunting spots were without water. This curtailed some of the mallard shooting but this bird was not especially plentiful anyway. Some hunters still reported excellent mallard shooting near the refuge but most of the top shooting was on divers. The late season shooting was the best. Goose shooting was slow and very few of these birds were taken. Blues and snows provided the bulk of the goose hunting. The flight patterns normally followed by geese moving in the refuge area appeared changed due to water conditions.

3. Fishing:

The bridge east of the refuge headquarters was again a favorite local fishing spot. Although the water level dropped throughout the summer the fishing for northern pike remained good enough to draw people back day after day. The larger

RICE LAKE REFUGE DEER HARVEST

1958-1967



1958 - 40

1959 - 42

1960 - 24

1961 - 43

1962 - 37

1963 - 109

1964 - 125

1965 - 60

1966 - 149

1967 - 164

fish were caught early in the summer but since much of the catch went into fish soup the size was no real problem for those who fished for food. Some fair catches of bullheads were made but these were secondary to northern pike. Many favorable comments were again received, especially from the older people, on the convenience of the fishing walkway and the fact that they could nearly always count on getting a few fish. The season was open from May 13, until September 30.

E. Violations:

Although considerable patrol time was spent both on and off the refuge no apprehensions were made. During the hunting seasons many weekends were donated for patrol and donated time often exceeded paid time spent on this activity. Much of this time was spent as a deterrent in that many hunters were contacted during the various seasons. One black bear was wounded but the hunter was not located. The animal appeared to be recovering when last seen.

F. Safety:

Regular discussions and corrections of safety items paid off with another year of safe actions and no lost time accidents. The station safety record was 1,373 days at the end of 1967. Crew participation in all phases of safety programs is important. This point was emphasized and the crew is to be commended for keeping it in mind. Hazards or possible unsafe practices were "caught when hot" so that the points were vividly illustrated rather than being allowed to cool and be warmed up later. Items not covered in this way were discussed in crew participation meetings.

VII OTHER ITEMS

A. Items of Interest:

The Refuge Manager prepared Sections II, III, V, VI and VII of this report. Mr. Thornbloom prepared Sections I, IV and portions of III and V and also assembled and typed the report.

The refuge staff again participated in the conduct of conservation education classes on the refuge, including the regular sessions of the Long Lake Conservation Center groups. A class of girls was a first for the Center and it must be admitted that they were enthusiastic for the program.

Mr. Thornbloom again assisted Dr. Green at the Refuge Manager Academy at Arden Hills from April 16 - May 19.

Mr. Pospichal taught regular classes in Conservation to the Riverside-Liberty 4-H Club. Conservation has been selected as the Club project for 1968 as it was in 1966. Mr. Pospichal also taught shop classes and Mrs. Pospichal taught cooking.

Mr. Pospichal conducted a beautification program in McGregor with the Riverside-Liberty 4-H Club and McGregor Garden Club. Hard maple trees were dug and transplanted to the boulevards in McGregor. This helped to win the 4-H Club both State and County Community Beautification Awards for framing.

The Revenue Sharing Program returned \$2,619.00 to Aitkin County for the year.

Mr. Pospichal was requested to lecture at the Basic Ecology Instruction Series to be conducted at the Aitkin High School in 1968. The request was accepted.

Mr. Thornbloom spent from November 2 - 8 on detail to Horicon Refuge.

A local farmer requested assistance in getting skunks from beneath his house. It is a pleasure to report that the recommended procedure of baiting them into live traps supplied by the refuge worked out to perfection and the animals were moved to more remote places without incident.

A local farmer reported a newly-born calf killed by a coyote. This was not in the manner of a complaint as it was some time later when the information came out in general conversation. Apparently the major impression left on the farmer was the humor of seeing the coyote leave a streak behind it in departing when shot at and missed. It is possible that the calf was found dead, though the farmer did not feel this was true.

Mr. Pospichal participated in county work on Rural Civil Defense by meeting with the members in Aitkin.

The refuge was honored with a visit by Director Gottschalk on October 3.

All pictures, with the exception of the aerial photographs were taken and processed by the Refuge Manager.

SIGNATURE PAGE

Submitted by:

Carl E. Pospichal
(Signature)

Date: February 29, 1968

Carl E. Pospichal
Refuge Manager
Title

Approved, Regional Office:

Date: MAR 6 1968

Lester H. Munda
(Signature)

Acting Asst. Re.

Regional Refuge Supervisor

67-1

A lean spring white-tail looks things over----
C.E.P.

67-2

and takes off for other parts.
C.E.P.



67-3

These mourning doves grew up in a ground nest in
the west fields.
C.E.P.

67-4

Small patches of pickerel weed dot Rice Lake.
C.E.P.



-67-5

The dry season was ideal for pothole construction
as Maintenceman Hurd demonstrates.
C.E.P.

- 67-6

One of the smaller potholes with its first catch
of rainwater.
C.E.P.



-67-7

Moderate size pothole, one of a chain of ponds
picking up seepage from the West Field Pool.
C.E.P.

67-8

One of the larger lobes which also taps into
the ditch for maximum utilization of available
water.
C.E.P.



67-9

All new pothole spoil was spread and seeded to
alsike clover which does well here.
C.E.P.

67-10

This new Athens Plow proved valuable both in rock
removal and summer fallow work in this heavy,
rocky clay soil.
C.E.P.



- 67-11

Rock and sod from rock-picking operations were put to good use in healing a three foot, eroded ditch.
C.E.P.

67-12

Large washouts below the Rice River Control were also a good place for many yards of field rock.
C.E.P.



67-13

In its first year the new Hilltop Pool raised
both geese and ducks.
C.E.P.

67-14

Hurd examines the dike and spillway of the
new pool.
C.E.P.



67-15

This new dike also took up much of the rock
picked from agricultural units.
C.E.P.

67-16

Indian wild rice harvesters sacking rice for sale.
C.E.P.



67-17

Same as previous photo.
C.E.P.

67-18

Rice bags lined up ready for weighing and sale.
C.E.P.



67-19

The sale price for the day is secured
by the Indian auctioneer.
C.E.P.

67-20

An assault is made on the heavy willow growth
along the north Rice Lake shoreline.
C.E.P.



67-21

The same area afterwards. This will be followed
up by chemical treatment.
C.E.P.

67-22

One of the six new large signs built on the refuge,
being erected.
C.E.P.



67-23

New recognition sign along Highway 65.
C.E.P.

67-24

New entrance sign on the main refuge access road.
C.E.P.



67-25

This beaver house was examined by many groups
of students during the year.
C.E.P.

67-26

Typical pileated woodpecker work.
C.E.P.



67-27

A nice white-tail specimen for a young hunter's
first deer.
C.E.P.

67-28

A coyote on Rice Lake.
C.E.P.



67-29

Minnesota Fisheries continued fish rescue operations.
C.E.P.

67-30

Again many thousands of northern pike up to eight
pounds in weight were removed for stocking outside
lakes.
C.E.P.



67-31

One of the refuge youngsters with a bobcat. This animal had developed a liking for our wintering geese.
C.E.P.



67-32

Aerial view of refuge headquarters.
6/22/65 J.W.



67-33

Portion of west field area with a mixture of
snows and blues.

10/12/67

J.W.



67-34

View of potholes made with refuge D-7. Rice Lake
landing in extreme background.
10/12/67

J.W.



67-35

Portion of west field area in relation to
new potholes, looking to the northwest. Old
goose pen site in foreground.
10/12/67

J.W.





REFUGE Rice Lake

MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada	22	11	10	9	9	8	8	8	8	8
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
<u>Coot:</u>										

3-1/50a
Coht. 1
(Re March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Rice Lake

MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling					5	10			105		
Trumpeter											
Geese:											
Canada	8	50	100	125	250	350	250		8,638		
Cackling Lesser				10	10	10			210		
Brant											
White-fronted											
Snow							20		140		
Blue							20		140		
Other											
Ducks:											
Mallard			100	200	300	750	2,000		23,450		
Black			20	20	20	50	300		2,870		
Gadwall											
Baldpate			30	100	150	500	500		8,960		
Pintail			10	10	40	100	100		1,820		
Green-winged teal			20	50	100	500	1,000		11,690		
Blue-winged teal						100	300		2,800		
Cinnamon teal											
Shoveler							20		140		
Wood			30	50	100	300	500		6,860		
Redhead						10			70		
Ring-necked					250	1,500	2,000		26,250		
Canvasback											
Scaup						400	8,000		58,800		
Goldeneye				125	200	150	250		5,075		
Bufflehead			10	10	20	100	300		3,060		
Ruddy			10	50	100	50	50		1,820		
Common Merg.			20	100	150	300	200		5,390		
Hooded Merg.											
Red-br. Merg.			10	10	10				210		
Coot						50	200		1,750		
					(over)						

	(5)	(6)	(7)		SUMMARY
	Total Days Use	Peak Number	Total Production		
Swans	105	10		Principal feeding areas	<u>Rice Lake, Rice River, potholes</u>
Geese	9,128	350			<u>and small impoundments.</u>
Ducks	159,285	15,520		Principal nesting areas	
Coots	1,750	200			

Reported by Carl E. Pospichal
 Carl E. Pospichal; Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

-1751

Form NR-1A
Nov. 1945MIGRATORY BIRDS
(other than waterfowl)Refuge.....Rice Lake..... Month of January to April 1956

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Common Loon	3	4/17	6	4/26						
Pied-billed Grebe	1	3/30	50	4/17						
Horned Grebe	275	4/26	275	4/26						
Great Blue Heron	8	3/24	150	4/17						
Common Egret	1	4/24								
Belted Kingfisher	3	4/16								
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	3	3/30	100							
Common Snipe	5	4/8	150							
Ring-billed Gull	6	4/11	50							
Herring Gull	2	4/11	50							

(over)

UPLAND GAME BIRDS

Refuge Rice Lake Months of January to April, 1946

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	5,000 acres timber and brush	25							200	Soft snow this winter was good for these birds. Drum- ming was up; first noted 4/1
Sharp-tailed Grouse	1200 acres of grass, brush and croplands.	120							10	Max. group of six seen durin winter. None noted on old dancing ground this spring.
Ring-necked Pheasant	1,500 acres of marsh, grass and crops.	1,500							1	Only a lone hen was seen. I was noted throughout the winter.

Reported by: *Carl E. Pospichal*
Carl E. Pospichal; Refuge Manager

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	1	4/6	20	4/29	
White-winged dove					
IV. <u>*Predaceous Birds:</u>					
Golden eagle (Bald)	2 ad.	2/16	7 im.	4/11	
Duck-hawk	1	2/16			
Saw Whet Owl					
Horned owl	Perm. res.; seen occasionally				
Magpie	Present throughout winter in groups to 25				
Raven	2	2/8	Regular by 2/13		
Crow	Perm. res.; seen regularly				
Barred Owl	1	3/24	Common by 4/1		
Sparrow Hawk	10	4/18			
Broad-winged Hawk	1	2/8	11	4/18	
Rough-legged Hawk	1	4/18			
Cooper's Hawk	1	2/23			
Goshawk	2	3/30	20	4/19	
Marsh Hawk	1	4/24			
Osprey	2	1/2	Seen regularly through winter		
Northern Shrike			Reported by <u>Carl E. Pospichal</u>		

Carl E. Pospichal; Refuge Manager

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1754
Form 4
(June 1945)

SMALL MAMMALS

Refuge Rice Lake

Year ending April 30, 1967

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion *	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
Badger														10
Beaver														75
Franklin's Gr. Sq.														Uncommon
13-lined Gr.Sq.														Common
Snowshoe Hare														Uncommon
Mink														50
Muskrat														300
Otter														15
Porcupine					8									200
Cottontail Rabbit														Rare
Raccoon					55									300
Striped Skunk					20									300
Fox Squirrel														Uncommon
Gray Squirrel														Fair. Com.
Red Squirrel														Common
Flying Squirrel														Fair. Com.
Chipmunk														Common
Weasel														Common
Woodchuck														Common
Red Fox					2									20
Coyote														5
Bobcat					1									20
List removals by Predator Animal Hunter														

List removals by Predator Animal Hunter

REMARKS: * Estimated.

Reported by Carl E. Pospichal; Refuge Manager

REFUGE RICE LAKE REFUGEMONTHS OF MAY TO AUGUST, 19 67

(1) Species	(2) Weeks of reporting period									
	4/30-5/6 1	5/7-13 2	5/14-20 3	5/21-27 4	5/28-6/3 5	6/4-10 6	6/11-17 7	6/18-24 8	6/25-7/1 9	7/2-8 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	200	100	140	160	200	200	210	210	210	
Cackling										
Brant										
White-fronted										
Snow	10	10	50	10						
Blue	10	10	150	10						
Other										
Ducks:										
Mallard	2,500	2,000	1,500	500	300	500	500	600	700	
Black	500	300	200	20	20	30	50	50	50	
Gadwall										
Baldpate	1,000	1,000	250	200	100	200	250	300	400	
Pintail	50	50	10							
Green-winged teal	1,000	1,000	500	200	100	150	200	200	300	
Blue-winged teal	500	1,500	1,000	500	500	300	300	300	400	
Cinnamon teal										
Shoveler	30	50	50	30	10	10				
Wood	500	500	500	500	500	500	700	750	800	
Redhead										
Ring-necked	1,000	800	300	100	50	50	20	30	40	
Canvasback	100									
Scaup	5,000	5,000	250	100	10	10				
Goldeneye	100									
Bufflehead	100	50	10							
Ruddy										
Other Hooded Merg.	200	200	100	50	50	70	70	100	100	
	500	750	500	200	50	50	100	100	100	
Coot:										

WATER BOWL
(Continuation Sheet)

MONTHS OF **MAY** TO **AUGUST**, 19 **67**

[illegible]

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas <u>RICE LAKE AND RICE RIVER</u>
*Geese	<u>53,200</u>	<u>340</u>	<u>100</u>	
Ducks	<u>598,920</u>	<u>12,580</u>	<u>2,430</u>	Principal nesting areas <u>ISLANDS AND GRASSLANDS ADJOINING</u>
Coots	<u>25,900</u>	<u>750</u>	<u>50</u>	<u>POOLS.</u>

Reported by Carl E. Pospichal
CARL E. POSPICHAL, REFUGE MANAGER

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual).

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1

(Nov. 194

MIGRATORY BIRDS
(other than waterfowl)Refuge RICE LAKE REFUGEMonths of MAY to AUGUST 19567

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Common Loon	Summer	Resident								20
Pied-billed Grebe	Summer	Resident								200
Horned Grebe	Spring	Migrant								300
Great blue Heron	Summer	Resident					1	50	150	250
American Bittern	Summer	Resident								150
Least Bittern	Summer	Resident								6
Common Egret	Summer	Visitor								2
Sandhill Crane	Summer	Resident								8
Sora Rail	Summer	Resident								500
Virginia Rail	Summer	Resident								100
Double-crested Cormorant	Summer	Visitor								10
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	Summer	Resident								250
Semi-palmated Plover										100
Common Snipe	Summer	Resident								1,000
Spotted Sandpiper	Summer	Resident								200
Semi-palmated Sandpiper	"	"								50
Least Sandpiper	"	"								100
Pectoral Sandpiper	"	"								100
Greater Yellowlegs										50
Lesser Yellowlegs										200
Wilson Phalarope										100
Hudsonian Godwit										10
Black Tern	Summer	Resident							100	500
Common Tern	"	"								300
Ring-billed Gull										100
Herring Gull										50

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:	Summer Resident				50
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Bald eagle				2	15
Golden eagle				2	15
Screech Owl					10
Duck hawk	Permanent Resident				20
Horned owl	Permanent Resident				60
Barred Owl	Permanent Resident				30
Magpie	Permanent Resident				500
Raven	Summer Resident				50
Crow	"	"			100
Red-tailed Hawk	"	"			200
Broad-winged Hawk	"	"			100
Sparrow Hawk	"	"			10
Marsh Hawk	"	"			20
Sharp-shinned Hawk	"	"			20
Cooper's Hawk	"	"			10
Rough-legged Hawk	"	"			10
Goshawk	"	"			10
Osprey	"	"			10
Reported by <u>Carl E. Fespichal</u>					10
Carl E. Fespichal, Refuge Manager					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
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 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750
Form NR-1B
(December 1956)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Rice Lake For 12-month period ending August 31, 19 67

Reported by Carl E. Pospichal Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type Acreage	(3) Use-days	(4) Breeding Population	(5) Production
Rice Lake	Crops -----	Ducks 1,604,000	1,200	700
	Upland -----	Geese 45,500	36	30
	Marsh 500	Swans 1,855	-----	-----
	Water 4,500	Coots 457,350	40	50
	Total 5,000	Total 2,108,705	1,276	780
Rice River Pool	Crops -----	Ducks 450,000	700	300
	Upland 240	Geese 21,200	24	20
	Marsh 1,550	Swans -----	-----	-----
	Water 1,200	Coots 5,000	6	-----
	Total 2,990	Total 476,200	730	320
Rice River and Tributaries	Crops -----	Ducks 150,000	800	400
	Upland 245	Geese 36,100	30	25
	Marsh 340	Swans -----	-----	-----
	Water 65	Coots 4,000	-----	-----
	Total 650	Total 180,100	830	425
Ponds, Potholes and Ditches	Crops -----	Ducks 150,755	1,360	800
	Upland 175	Geese 13,000	8	20
	Marsh 1,065	Swans -----	-----	-----
	Water 73	Coots 2,000	4	-----
	Total 1,313	Total 165,755	1,372	820
Mandy and Twin Lakes	Crops -----	Ducks 8,000	100	50
	Upland 70	Geese 1,000	2	5
	Marsh 100	Swans -----	-----	-----
	Water 106	Coots 1,000	-----	-----
	Total 276	Total 10,000	102	55
Agricultural Units	Crops 241	Ducks 150,000	500	180
	Upland 97	Geese 43,191	-----	-----
	Marsh -----	Swans -----	-----	-----
	Water -----	Coots -----	-----	-----
	Total 338	Total 193,191	500	180
Grand Totals	Crops 241	Ducks 2,512,755	4,660	2,430
	Upland 827	Geese 179,991	100	100
	Marsh 3,555	Swans 1,855	-----	-----
	Water 5,944	Coots 462,350	50	50
	Total 10,567	Total 3,163,951	4,810	2,580

(over)

Refuge RICE LAKE REFUGEMonths of MAY to AUGUST, 1967

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	5,000 acres timber & brush	14							350	Brood production this year showed a marked increase.
Sharp-tailed Grouse	1,200 acres grass brush & cropland	120							10	Population shows little or no change since last year. No broods were observed.
Ring-necked Pheasant	1,500 acres marsh, grass and crops	-								None noted during summer.

Reported by:

Carl E. Pospichal
Carl E. Pospichal
Refuge Manager

REFUGE Rice Lake Refuge

MONTHS OF September TO December, 19 67

(1) Species	(2) Weeks of reporting period									
	9/3-9 1	9/10-16 2	9/17-23 3	9/24-30 4	10/1-7 5	10/8-14 6	10/15-21 7	10/22-28 8	10/29-11/4 9	11/5-11/11 10
Swans:										
Whistling								80	100	
Trumpeter										
Geese:										
Canada	300	400	500	500	1,200	1,200	800	800	500	100
Canada Lesser				150	150	200	100			
Brant										
White-fronted										
Snow			20	200	500	5,000	2,500	1,000	500	
Blue			40	200	200	500	200	100		
Other										
Ducks:										
Mallard	1,200	1,200	1,000	2,000	5,000	5,000	14,000	15,000	10,000	500
Black	200	200	200	200	500	500	1,000	1,000	500	10
Gadwall				200	500	500	500	500		
Baldpate	1,200	1,200	1,000	5,000	15,000	5,000	2,000	1,000	50	
Pintail	200	200	200	500	500	500	200	100		
Green-winged teal	1,200	1,200	1,400	6,000	10,000	10,000	6,500	5,000	1,500	
Blue-winged teal	2,000	2,000	3,000	4,000	5,000	2,000	1,000			
Cinnamon teal										
Shoveler										
Wood	1,500	1,500	1,500	1,200	1,200	1,000	1,000	500	50	
Redhead					500	500	1,500	1,000		
Ring-necked	20	20	20	4,000	25,000	20,000	20,000	15,000	500	
Canvasback					200	200	1,000	750		
Scaup						500	1,000	5,500	2,000	100
Goldeneye							100	200	100	10
Bufflehead							10	20	50	
Ruddy										
Other Hooded Merg.	200	200	200	200	200	200	1,000	2,000	1,000	50
• Note: Rising 9/14-24 kept birds off the lake during the day.										
Coot:	1,200	2,000	2,000	7,000	15,000	20,000	10,000	5,000	100	

WATER FOWL
(Continuation Sheet)

MONTHS OF **September** TO **December**, 19 **67**

[illegible]

3-1751
Form NR-1.
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Rice Lake Refuge Months of September to December 19567

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Common Loon	Summer Resident		10	10/3	2	10/23				
Pied-billed Grebe	"	"	100	10/3	3	10/23				
Great Blue Heron	"	"	150	9/1	1	11/7				
American Bittern	"	"	75	9/1	1	10/30				
Sora	Very common in rice beds September and early October									
Sandhill Crane	Summer Resident		4	Sept. & Oct.	4	10/31				
II. <u>Shorebirds, Gulls and Terns:</u>										
Woodcock	3	10/20			1	10/30				
Killdeer	Summer Resident		Common		1	10/20				
Semi-palmated Plover				9/27						
Common Snipe	Summer Resident		500	9/19						
Spotted Sandpiper	"	"	200	9/19						
Least Sandpiper			1,500	9/27						
Pectoral Sandpiper			1,000	9/27						
Lesser Yellowlegs	300	9/1	1,000	9/27						
Greater Yellowlegs	150	9/1	200	9/27						
Long-billed Dowitcher	10	9/27	10	9/27	10	9/27				
Black Tern	250	9/1			10	9/19				
Common Tern	100	9/1			20	9/19				
Ring-billed Gull	25	9/1			15	9/17				
Herring Gull	5	9/1	20	9/29	20	10/3				
Bonaparte's Gull	2	9/17								

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons</u> :					
Mourning dove					
White-winged dove					
IV. <u>Predaceous Birds</u> :					
Bald Eagle	1	9/8	15	11/7	1
Barred Owl	50	9/1	25	10/20	2
Horned owl	3	9/8			
Magpie	Noted occasionally during period.				
Raven	Resident	25	11/5	Still present end of December	
Crow	Summer Resident	500	10/1	11/7	
Barred Owl	Resident - Fairly common				
Snowy Owl	1	11/25			
Red-tailed hawk	20	9/1	15	10/20	1
Sparrow Hawk	40	9/1			
Broad-winged hawk	2	9/1			
Rough-legged hawk	10	9/1	20	10/20	1
Cooper's Hawk	4	9/12			
Sharp-shinned Hawk	1	9/1			
Coon Hawk	Resident - occasional	11/12			
Northern Shrike	Occasional visitor during				
Cowbird					

Reported by

Carl E. Fuschel, Refuge Manager

INSTRUCTIONS

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)

II. Shorebirds, Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750
Form NR-
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge Rice Lake Refuge; McGregor, Minnesota

Year 1967

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
			NO WATERFOWL HUNTING ON REFUGE.					

(over)

INSTRUCTIONS

- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
- (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spent hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.
- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 percent. $\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}.$

3-1752
Form 2
(April 1946)

UPLAND GAME BIRDS

Refuge Rice Lake Months of September to December, 19 67

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio		(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage		Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	5,000 acres timber and brush	10								500	Fall population considerably above that of recent years.
Sharp-tailed Grouse	1,200 acres grass and brush	80								15	Slight over-all increase but no change in small no. using ag. units.
Ring-necked Pheasant	700 acres crop, marsh & grass	700								1	One hen noted in vicinity of old goose pen as in 1966.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | | |
|---------------------|--|
| (1) SPECIES: | Use correct common name. |
| (2) DENSITY: | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. |
| (3) YOUNG PRODUCED: | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. |
| (4) SEX RATIO: | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. |
| (5) REMOVALS: | Indicate total number in each category removed during the report period. |
| (6) TOTAL: | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons. |
| (7) REMARKS: | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested. |

* Only columns applicable to the period covered should be used.

3-1

Form R-3
(June 1945)

BIG GAME

Refuge

Rice LakeCalendar Year 1947

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
White-tailed Deer	12,000 acres marsh and upland	75	164									300	100	
Moose	12,000 acres marsh and upland											2	-	
Black Bear	12,000 acres marsh and upland	10										20	10	

Remarks: Moose, bear and deer move in and out of the refuge as surrounding habitat is similar. Two bull moose were seen during the summer and fall. Bear sightings during the year were common; 5 were noted at one time.

Reported by

Carl E. Fospichal; Refuge Manager

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

DISEASE

Refuge Rice Lake RefugeYear 19 67

Botulism

Lead Poisoning or other Disease

Period of outbreak NONE

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease NONE

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

PUBLIC RELATIONS
(See Instructions on Reverse Side)

Refuge Rice LakeCalendar Year 1967

1. Visits

a. Hunting 1,200 b. Fishing 2,100 c. Miscellaneous 7,080 d. TOTAL VISITS 10,380

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	--	--	
Upland Game	--	--	
Big Game	<u>1800</u>	<u>6,000</u>	<u>Bureau</u>
Other	--	--	

Number of permanent blinds --Man-days of bow hunting included above *~~Hunters did not take advantage of season.~~

Estimated man-days of hunting on lands adjacent to

refuge 1,000

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	<u>-</u>	<u>-</u>
Streams and Shores		<u>2</u>

1c. Miscellaneous Visits

Recreation 5,980 Official 600
Economic Use 500 Industrial -

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	On Refuge		Off Refuge	
	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs	<u>1</u>	<u>7</u>	<u>4</u>	<u>300</u>
Bird and Garden Clubs	<u>3</u>	<u>20</u>	<u>3</u>	<u>20</u>
Schools	<u>4</u>	<u>149</u>	<u>8</u>	<u>647</u>
Service Clubs	<u>-</u>	<u>-</u>	<u>1</u>	<u>25</u>
Youth Groups	<u>6</u>	<u>190</u>	<u>12</u>	<u>280</u>
Professional-Scientific	<u>17</u>	<u>112</u>	<u>2</u>	<u>12</u>
Religious Groups	<u>-</u>	<u>-</u>	<u>2</u>	<u>100</u>
State or Federal Govt.	<u>2</u>	<u>12</u>	<u>2</u>	<u>220</u>
Other <u>Civic Groups</u>	<u>15</u>	<u>118</u>	<u>1</u>	<u>25</u>

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	<u>5</u>	Radio Presentations	<u>2</u>
Newspapers (P.R.'s sent to)	<u>2</u>	Exhibits	<u>3</u>
TV Presentations	<u>2</u>	Est. Exhibit Viewers	<u>10,000</u>

Bureau of Sport Fisheries and Wildlife
PUBLIC RELATIONS
INSTRUCTIONS
(See Instructions on Reverse Side)

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1757

Form NR-7

Rev. June 1960)

NONAGRICULTURAL COLLECTION RECEIPTS, AND PLANTINGS (1)

Refuge RICE LAKE REFUGEYear 1967

	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Wild Rice	6,858 lbs.	C	8/14 - 8/26	Hand flail by Indians		None- All sold to highest bidder. Income- \$11,424.63	None						

- (1) Report agronomic farm crops on Form NR-8
 (2) C = Collections and R = Receipts
 (3) Use "S" to denote surplus

Total acreage planted:

Marsh and aquatic _____

Hedgerows, cover patches _____

Food strips, food patches _____

Forest plantings _____

Remarks: _____

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Rice Lake Refuge County Aitkin State Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Corn					33	10	33	Eye planted for fall browse	32
Buckwheat					32	12	32		
Oats					49	20	49		
Rye (fall browse crop)					32		32		
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations - Haying Operations 0 Grazing Operations 2

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Tame Wild	36.0		36.00	1. Cattle	35	162.5	\$162.50	100
	180.5		180.50	2. Other				
				1. Total Refuge Acreage Under Cultivation				250
Hay - Wild	216.5		\$216.50	2. Acreage Cultivated as Service Operation				250

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

REFUGE GRAIN REPORT

Refuge RICE LAKE REFUGEMonths of JANUARY through DECEMBER, 1967

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn	150	-	150			50	50	100		100	
Rye	25	10	35		7		7	28	28		
Buckwheat	80		80		16		16	64	64		

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

(10) Remarks _____

*See instructions on back.

(10) Remarks

NR-8a

(9) Grain is stored at

(8) Indicate shipping or collection points

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

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DATE	OF PERIOD BEGINNING ON HAND	PERIOD DURING RECEIVED	TOTAL	Disposed of	Seeded	Feed	Total	PERIOD END OF ON HAND	Seed	Feed	Surplus
(1)	(2)	(3)	(4)	Grain Disposed of			(5)	(6)	Proposed or Suitable Use		
				(2)					(3)		

Refuge _____ Months of _____ through _____ 192

REFUGE GRAIN REPORT

TIMBER REMOVAL

Refuge Rice Lake Refuge Year 1967

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Don Kangas	67-1	Timber Unit 4, 6, 8		110.76 Cords 162 Posts 36 Posts	.75 .02 .03	83.07 3.24 1.06		Aspen Cedar - 7' Cedar - 8'

Total acreage cut over.....

Total income 87.36

No. of units removed B. F.

Method of slash disposal Dispersal

Cords 110.76

Ties

Posts 167

DICE LAKE REFUGE

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number

Reporting Year

1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	NONE							

10. Summary of results (continue on reverse side, if necessary)